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# Health Information Technology and Language Barriers in Pre-Admission Clinics

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## Abstract

LEP or Limited English Proficiency patients across the United States are at higher risk for decreased quality of care because of their inability to communicate effectively with healthcare providers. Interpreters are not offered in a consistent manner due to many variables such as cost, availability of qualified interpreters, the time spent with patients due to an increased work-overload and clinician lack of knowledge into technologies available to use. Healthcare information technology such as video and telephone interpretation can bridge the gap between patients and medical personnel when a language barrier is present. At the pre-admission clinic, the Nursing personnel interviews the patient and assesses the need for an interpreter. All patients scheduled for an appointment at the pre-admission clinic will undergo a scheduled surgery or procedure that will require General Anesthesia, Epidural blocks or the administration of Local Monitored Anesthesia Care. The purpose of this paper is to determine the practices of Nurses in these initial interactions, regarding communication, technology, and documentation in the Electronic Health Record through a qualitative survey.

**Acknowledgment**

I would like to thank all the Nurses who gave their time generously expressing their views in this research. As a Nurse myself, I know time is of the essence when caring for patients, so we must always use it wisely.

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## Definition of Terms

1) Care Manager Horizon EHR: McKesson ® Clinical Documentation known now as Paragon. The pre-admission clinic uses the applications for clinician documentation including clinical assessments, care plans and medication reconciliation.
2) MSM: Perioperative charting for McKesson ® Surgical Manager from pre-admission to post-anesthesia care recovery. The patient's problem section from the EHR does not integrate with Clinical Nurse Documentation when using it, and the contents are not accessible from one surgery event to the next visit.
3) EHR: Electronic Health record of an individual following national standards, created and managed by authorized personnel (Brodnik, Rinehart-Thompson, & Reynolds, 2012).
4) LEP: Limited English proficiency or LEP describes individuals unable to speak, read or write English as defined by Title VI of the Civil Rights Act (Brodnik, Rinehart-Thompson, & Reynolds, 2012).
5) Language Line: CyraCom is the provider of language interpreter services. This mHealth platform offers interpretation and translation in-person, via phone, video, mobile app, or written text. The Company supports hundreds of languages and operates 24/7 (CyraCom, 2018). It is only utilized via phone at the pre-admission clinics.
6) Ad Hoc Interpreter: family, friend or untrained staff and sometime cultural liaison between the patient and the healthcare provider (Juckett &Unger, 2014).
7) Informed Consent: The Joint Commission defines Informed consent as the permission or agreement given by a subject to medical personnel for a procedure or treatment ("Joint Commission," 2016).

# CHAPTER 1

## INTRODUCTION

The 2018 Hospital National Patient Safety Goals by the Joint Commission aims to increase safety and reduce errors when providing care. Goal one is to improve the accuracy of patient identification. Goal three is to use medications safely and to obtain and record the most recent medication list of medications taken at home. Goal seven is to prevent mistakes in Surgery ensuring the correct surgery is done on the correct patient. These goals cannot be implemented without proper communication with the patient. The pre-admission clinic has many Nurses with different roles. Patients having a scheduled surgery go through the admission process by interviewing with a pre-admit nurse. Information such as correct name, birthdate, correct surgery, the name of their physician, allergies, medical history and home medication list are some of the categories reviewed with the patients. According to the agency for Healthcare Research and Quality, the Joint Commission Sentinel Event Database lists communication as the number one reason for a Sentinel Event ("AHRQ", 2018). These limited English proficiency patients are identified at registration and subsequently labeled as Non-English speakers. This healthcare interaction has variables such as time constraints, use of an interpreter, accuracy of the translation, use of the language line and literacy of the patient. In the United States 350 different languages are spoken, with 57 million people identifying themselves as Hispanics, making them the largest ethnic minority, at 18 percent of the total population according to the 2015 U.S. Census. Mexico, Puerto Rico, El Salvador, Cuba, Dominican Republic and Guatemala are the highest percent of immigrants of Spanish-speaking countries. Each country has a different set of informal phrases, idiomatic expressions and cultural behaviors characteristic only to their population, making a brief interaction even more difficult.  Section 1557 is the civil rights

provision of the Affordable Care Act of 2010. It prohibits discrimination on the grounds of race, color, national origin, sex, age, or disability in certain health programs and activities. It applies to any health program or activity, any part of which receives funding from the Department of Health and Human Services (HHS), such as hospitals that accept Medicare or doctors who receive Medicaid payments.

The prohibition on national origin discrimination requires covered entities to take steps to provide meaningful access to individuals with limited English proficiency. Providing an in-person qualified interpreting service for different languages can be expensive for healthcare organizations and can delay treatment in emergency settings. Telephone interpretation is widely used today and it is useful in short conversations but interpreters cannot read body language and are unable to establish a relationship with the patient, therefore, also unable to earn their trust.

**Background**

The ethnic diverse population in Knoxville is comprised of an ever-growing community of Hispanics. I obtained my Nursing degree from the University of Panama in an all-Spanish curriculum, and working as a bilingual Nurse gives me an insight into how difficult it is to communicate with patients from different countries. The ability to speak English differs in every patient and it takes extra time to obtain sensitive information from the patient and their family members. Once the nurse establishes that an interpreter is needed, the nurse has the option to contact the language line for interpretation. Part of the information entered in the EHR includes primary language, preferred language and the use of an interpreter. It has been my experience that these parts of the EHR are often ignored when interviewing patients and nurses prefer other ways to communicate the need of a translator to subsequent nurses. The pre-admission clinic sees outpatients that are scheduled for a procedure or surgery days before the scheduled

procedure. The rest of the patients admitted to the Hospital are brought from the Emergency Room then to floor units due to an unplanned emergency. Pre-admission nurses enter valuable information that will be used by physicians and nurses in the holding room, operating room, recovery room and if admitted it will also follow into the floor unit. The patients in the pre-admission clinic have more time to ask and answer questions because it is a face-to-face appointment that can last up to an hour.

# CHAPTER 2

# REVIEW OF LITERATURE

## Methods

A systematic literature review was done of academic databases such as PubMed, CINAHL and Google Scholar for publications in the US between 2013 and 2018, with the terms language barrier in healthcare, nursing, health technology and mobile technology. I received assistance in this search by the Research and Learning Service Librarian Wesley Holloway at the Health Science Library, University of Tennessee Health Science Center. In the database CINAHL, the search of language barrier, healthcare and mobile technology had no results. Pub-Med showed 8 results for publications in the last five years but only five articles were found to be adequate for review.

## Survey Methods

These following studies used observation, surveys and chart reviews. Abstracts were reviewed to include content associated with patients of limited English proficiency being admitted in any healthcare setting in the US. I did not find any publication related to language barriers in a pre-admission clinic or surgical pre-admission.

## Variables

These articles contain many variables: the use of interpreters, bedside phone interpreters and digital device interface, communication and initial interaction, informed consent, limited English proficiency patients, documentation and potential cross-cultural communication barriers.

**Table 1**

| Author(s), year | Design | Result |
|---|---|---|
| Communication with limited English-proficient families in the PICU.<br><br>Zurca AD, Fisher KR, Flor RJ, Gonzalez-Marques CD, Wang J, Cheng YI, October TW (2017). | English proficient and Spanish-speaking LEP families of children admitted to the PICU of a large tertiary pediatric hospital completed surveys between 24 hours and 7 days of admission. | "Physician and nurse communication with LEP families is suboptimal. Communication with LEP families may be improved with regular use of interpreters and an increased awareness of the added barrier of language proficiency" |
| Using an iPad for Basic Communication Between Spanish-Speaking Families and Nurses in Pediatric Acute Care; A Feasibility Pilot Study<br><br>Jackson K., Mixer S. (2017). | Interviews, qualitative survey. | "The findings indicate that a mobile digital device interface is a feasible method for augmenting bedside communication with Spanish-speaking patients and families. These results also may serve as a reference for the development of similar mobile device interfaces. Further research with a larger sample size is needed" |
| Impact of Telephone versus Video Interpretation on Parent Comprehension, Communication and Utilization in the Emergency Department: A Randomized Trial.<br><br>Lion, K. C., Brown, J. C., Ebel, B. E., Klein, E. J., Strelitz, B. Gutman, C. K., … Mangione-Smith, R. (2015). | "Randomized trial of telephone versus video interpretation. Investigators were blinded to interpretation modality during outcome ascertainment." | "Video-assigned parents were more likely to correctly name the child's diagnosis than those assigned to telephone (75% vs 60%, p=.03), and less likely to report frequent lapses in interpreter use (2% vs 8%, p=.04). There were no differences in parent-reported quality of communication or interpretation, or in ED LOS or charges. Video interpretation was more costly (per-patient mean $61 vs $31, p<.001). Parent-reported adherence to assigned modality was |

| | | |
|---|---|---|
| | | higher for the video arm (93% vs 79%, p=.004)" |
| Improving nurse-patient communication with patients with communication impairments: hospital nurses' views on the feasibility of using mobile communication technologies.<br><br>Sharpe B., Hemsley B. PhD, (2015). | This study involved an online survey followed by a focus group, with findings analyzed across the two data sources. | "The use of mobile communication technologies with patients who have communication difficulties is feasible and may lead to improvements in communication and care, provided environmental barriers are removed and facilitators enhanced" |
| Utilization of a Mobile App to Assess Psychiatric Patients with Limited English Proficiency<br><br>Villalobos, O., Lynch, S., DeBlieck, C., & Summers, L. (2017). | Participants were asked to complete the Interagency Language Roundtable (ILR) scale to assess their speaking and listening proficiency with Spanish. They were provided a tutorial and online resources showing how to use the Canopy Translation App. They used the translation app during their assessments of Spanish-speaking patients.<br><br>After 2 weeks, participants were asked to complete the System Usability Scale (SUS)-1 test questionnaire. Post-usage was measured after a period of 6 weeks, by completing the SUS-2 post-test questionnaire, which included a question asking the total number of times the app was used. | Participants found the Canopy Translation App useful during their interactions with Spanish-speaking patients. |

# CHAPTER 3

# METHODOLOGY

## Research Design

It is a descriptive research as it intends to describe some practices, challenges and knowledge by Nurses when seeing a LEP patient. Descriptive research reports the status of a situation. The information obtained through this study means to establish a baseline to the use of translation technology and documentation practices.

## Purpose of the Study

This study aims to explore the practices of nurses when seeing a limited English proficiency patient and to assess their knowledge of additional interpretation technology.

## Significance of the Study

The healthcare workplace is a high-demand and stressful area where Nurses must focus and take decisions under great pressure. A successful communication between patient and Nurses requires time and dedication. Technology can ease the constrains of language barriers and make communication with LEP patients more standardized giving Nurses and patients a better patient-provider relationship.

## Research Questions

Questions to be answered through this study are

- What challenges Nurses encounters when trying to communicate with a Spanish speaking patient?
- What medium do they use to communicate the need for interpreters to other healthcare personnel?
- Are Nurses aware of language services and technology?

- Is there a protocol or policy to address a LEP patient?
- Is the protocol or program followed by Nurses?
- How often LEP patients are seen in a month at the clinic as perceived by Nurses?
- What resources are available to the patients and the provider?

**IRB permit and ethical considerations**

I followed the research guidelines of the University of Tennessee and submitted a request for expedited review of my proposal around February 2nd, 2018, approved February 26th, 2018. It is IRB # 18-05812-XM. I communicated verbally and via electronic-mail with two of the surgery department managers in December 2017 and again with their replacements in January 2018. I personally spoke to each nurse to invite them to participate in the study. I kept the surveys in an envelope without names to maintain the anonymity of their responses.

**Population and Sample**

Registered Nurses and Licensed Practical Nurses interviewing Limited-English proficiency patients, taking health histories in the pre-admission clinic of the surgery department of two Knoxville area Hospitals. These Surgery Departments employ dozens of Nurses in the Holding-Room, Operating Room and Post-Analgesia Care Unit. The pre-admission Clinic rotates nurses performing duties for specific surgical programs like the Joint Replacement Marshall Steele program, Gastro-Intestinal procedures, Ophthalmic procedures and General Surgery. The pre-admit clinic consist of approximately 16 Nurses in one Hospital and the second Hospital has a small clinic of three Nurses and several PRN employees. I gave the survey to 20 Nurses and I received 100% response rate. The participants consisted of 19 women and one male. Although gender and age questions were not included in the survey, these participants have worked

professionally in their role of nurses between 7 to 48 years. The nurses at these clinics typically see scheduled and walk-in patients with a desk computer in their office. In addition to seeing patients, nurses call patients at home and their workplace to obtain medication list, allergies, health and surgical history.

**Data Collection Procedures**

The survey and the consent form was given to each Nurse and they returned it to me when completed. The questions had to be answered by Yes or No and two of the questions were open questions.

**Data Collection Instrument**

The Survey consisted of 13 questions and one line for comments or suggestion. Seven questions dealt with how Nurses practiced, and two questions are worded to assess the level of knowledge with new technology and current policies. Four questions relate to the possible challenges Nurses might encounter when taking care of LEP patients.

# CHAPTER 4-

## RESEARCH AND ANALYSIS

Responses to the survey questions.

Question 1: 12 Nurses said they see LEP patients one or twice per month.

Question 2: 20 Nurses said they assess level of English proficiency before finding an interpreter.

Question 3: 15 Nurses have used the Language Line.

Question 4: 19 Nurses said they use ad-hoc translators at the request of patients.

Question 5: 11 Nurses said they were aware of video translation.

Question 6: 5 nurses experienced problems with the telephone translation.

Question 7: 9 Nurses responded No to the question of discrepancies with the name of the patients.

Question 8: 14 Nurses print Informed Consent documents in another language.

Question 9: 14 Nurses said they have read LEP policies.

Question 10: 4 Nurses preferred Video assisted translation, the rest said no or indifference to it.

Question 11: 15 Nurses use the Internet to translate words.

Question 12: Half the Nurses document on MSM and write it on the Communication Sheet but avoid documenting the information in the Nursing Notes section of the EHR.

Question 13: 14 Nurses denied printing pre-op instructions in another language.

Question 14: No comments made by Nurses.

**Figure 3-**

**Work Practices regarding LEP patients**

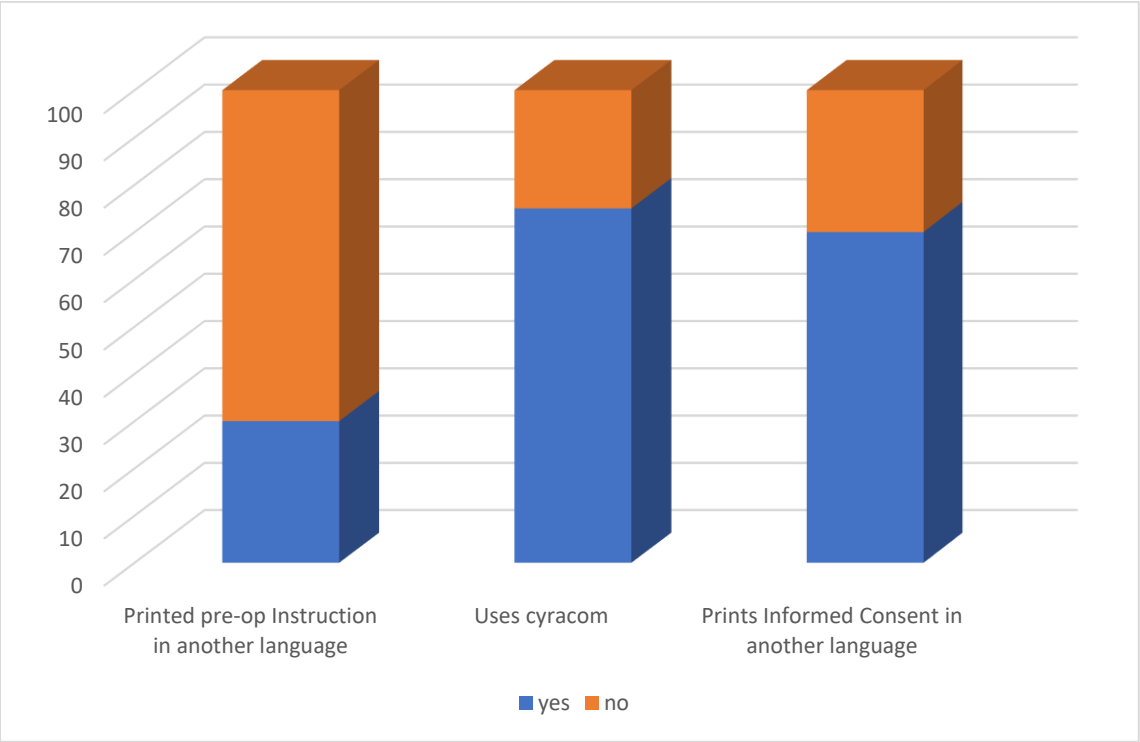


**Figure 4-**

**Responses to question 11, 7 and 9**

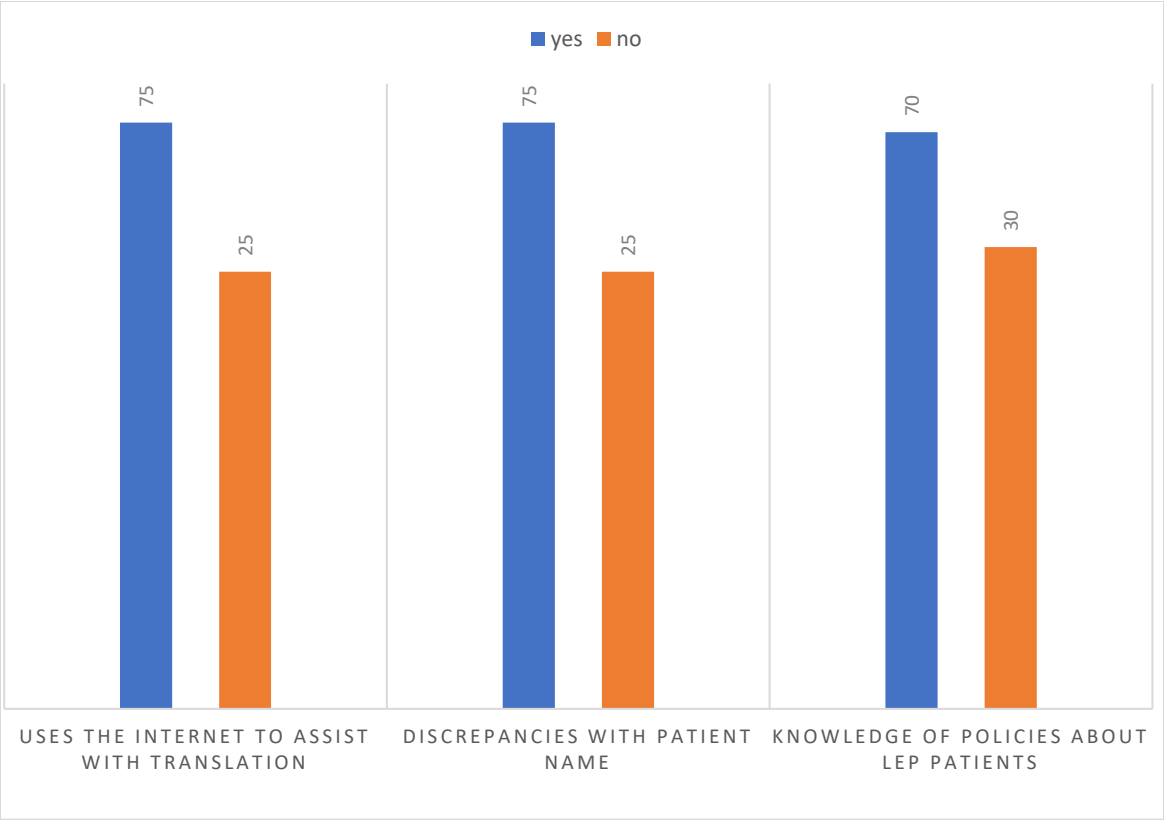


**Figure 5-**

**Response to question 1**

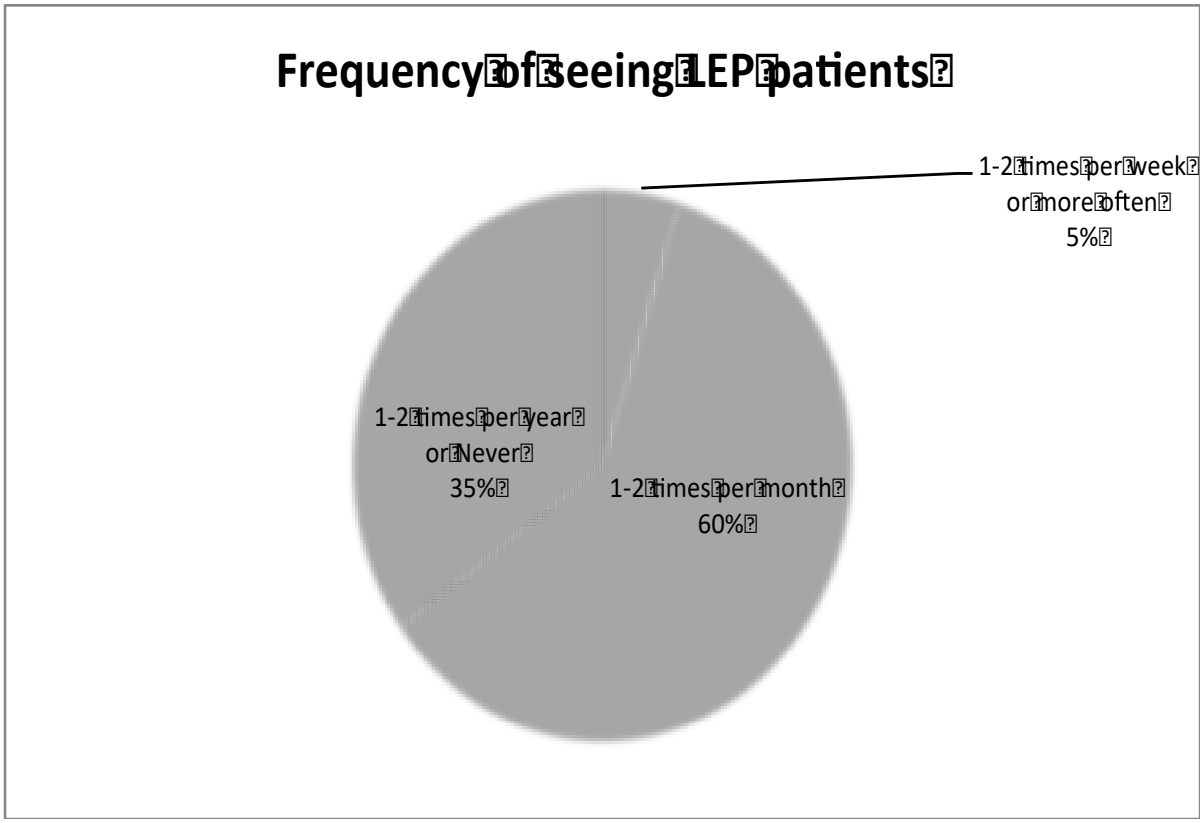


**Figure 6-**

**Responses to question 5 and 10**

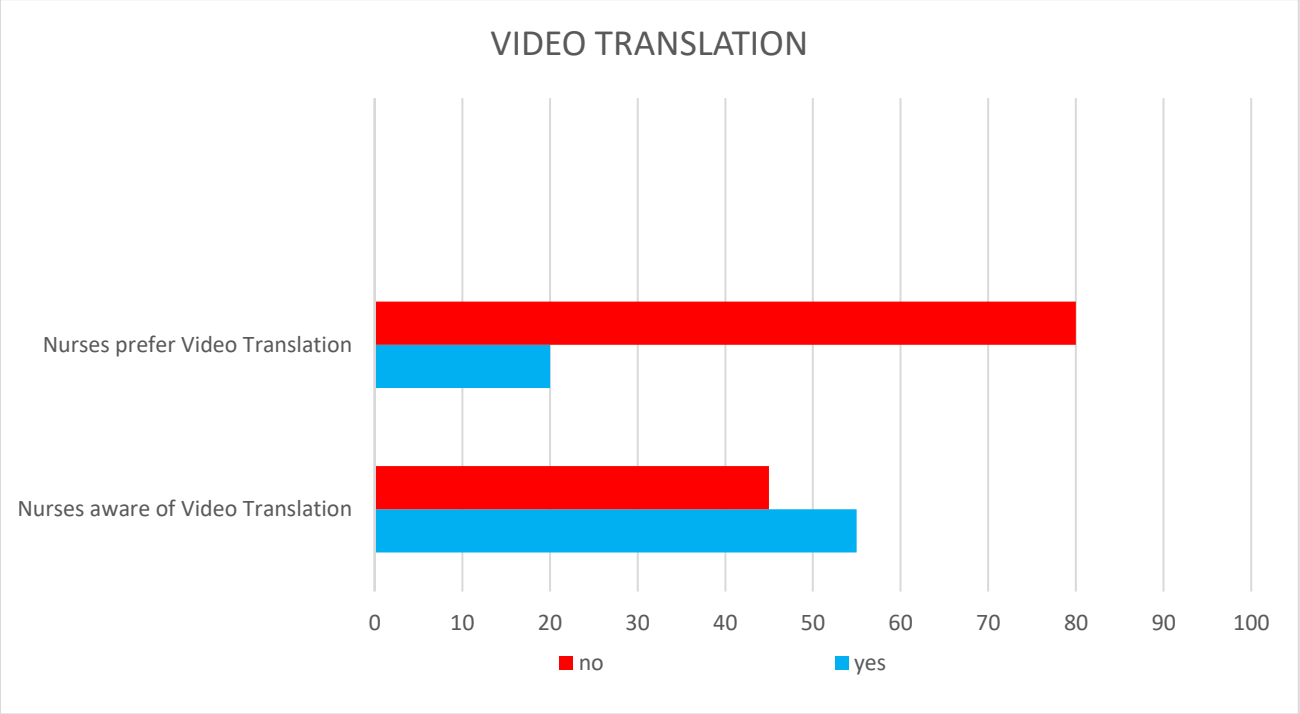
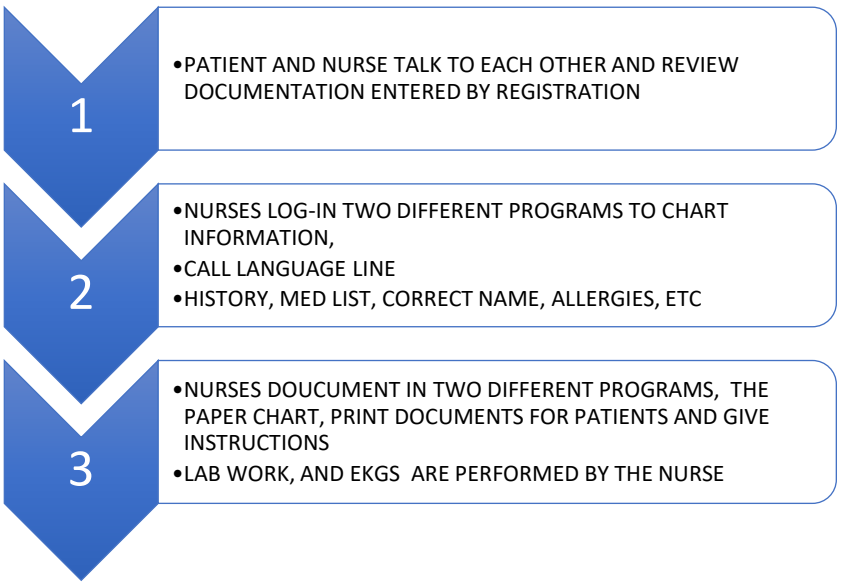



**Figure 7-**

**Workflow diagram**



**Practice:** Nurses do attempt to talk to the patient to assesses the level of understanding but many times using ad-hoc interpreters, although they also seem to be comfortable using the Language Line when needed. The Informed Consent document is printed in the language of the patient but the pre-op instructions are not. Nurses have used the Internet to assist them in translation. The use of ad-hoc translator is discouraged due to limited knowledge of medical terminology and privacy issues. When a patient insists on having a family member or and ad-hoc translator, the Nurse should document it in the patient's medical record (Juckett & Unger, 2014). It should also be consistent with Hospital policies which in these Hospitals it is only allowed to use bilingual staff to interpret in addition to using the Language Line.

**Knowledge:** Nurses have read policies on LEP patients but it is unclear if the policies they are referring to, are related to the organization. They are aware of Video assisted technology but they are not aware of apps or resources to help them in translation or communication.

Question 10 asked Nurses their views on using video translation and most of them said No. Studies on the use of Video used in translation yielded better results than the use of phone translation alone. Families enrolled in Video translation recalled more information and are more involved in their child's care (Lion & all, 2015).

**Challenges:** Nurses do not see patients with a language barrier more than twice per month and it could prevent Nurses from getting proficient with the procedure used in translation. An assessment of the of the geographic area and the multicultural population will help healthcare organizations establish a plan to determine the resources needed. The pre-admission Nurses accept the procedure of phone-translation but they do seem to reject the idea of Video-translation missing an opportunity to improve communication through technology.

Pre-admission patients are registered before seeing a Nurse and difficulty communicating at the registration point can result in duplicate records. During inpatient registration, 92 percent of duplicate medical records are created (Pennic, 2013). A duplicate medical record happens when one patient is associated with more than one medical record. It has been my experience that LEP patients have more difficulties with name errors due to complex spelling or data entry not easily verified by hospital staff.

Some Hispanic patients depending on their country of birth may carry two last names; the first belongs to the father and the second to the mother. Combined with first and middle name, this can become four names or five if the female is married. Registration personnel may invert names or link them together because lack of space, creating confusion. On the other hand, other cultures like Filipino women assume their maiden name as a middle name after they get married and take their husband's last name. These discrepancies carry serious risk when caring for patients unable to communicate freely and requiring interpreters.

## Limitations

Further study is needed into nurse's knowledge of these hospital policies. Instructions and policies regarding LEP patients are not part of the Annual Computer Based Learning. However, nurses uniformly responded that have read these policies. The interaction between patient and nurses needs to be observed and deviation from the standard of a normal exchange of information needs to be documented to identify solutions. Athough difficult to enforce, current policies do not allow Nurses to carry cell-phones on the job. Many nurses prefer not to use them in front of patients, limiting the resources available to them.

# CHAPTER 5

# CONCLUSION

Healthcare interactions involving patients with limited English proficiency require effort from all involved. Nurses in this study see the potential benefit of communication technology but are comfortable with their current practice of telephone translation. Barriers to the use of mobile technology, such as reluctance to change, are evident in the pre-admission clinic due to workload and familiarity with old technology. Nurses interviewed for this project were not aware of any apps to help them in the communication process and some have never attempted to utilize the telephone language line. More implementation research is needed to understand the benefits and potential harms of using communication apps and mobile technology like I-Pads or I-Phones by Nurses in the pre-surgical area. LEP patients who are unable to understand the process of admission and discharge might have longer length of stay, making the use of mHealth platforms like Cyracom and the Language Line all-the-more important (Wicklund, 2016). These patients might also lack full understanding of the Informed Consent for procedures and operations leading to poor comprehension of pre- and post-operative instructions. Consent is a legal requirement for a procedure and nurses know the importance of the Informed Consent, often printing it in the native language of the patient. However, they do not do the same with the pre-op instructions. The surgical area and the pre-admission clinic are fast paced environments due to workload demands and Nurses interviewing complex communication needs-patients which take more time. It is simply natural that some nurses avoid direct communication and turn to family members or friends of the patient for assistance. It is important to highlight the need for effective communication with the aid of mobile technology and to encourage nurses to provide LEP patients with tools for more control in decision-making, regarding all aspects of their health.

## RECOMENDATIONS

Nurses currently do not have a single standardized means to communicate the need for a translator in the patient's electronic medical record. A more standardized practice will allow information to flow and to remain documented for the following hospital encounter or to communicate better to the following shift. The login process between different computer system like MSM and the Nursing Charting complicates this challenging process of communication and use of linguistic service technology. The use of interpretation by phone is not standardized in the hospital and many nurses are not aware of the procedure. More training and education is needed. The use of bedside interpreter phone system can improve patient care in LEP patients and the placement of a more accessible phone at patient's bedside will increase compliance by nurses, although it may not eliminate disparity of care (Lee & all, 2017).

An adequate language plan for LEP patient needs to be drafted to include: interaction and examinations with the use of an interpreter documented in the EHR. Elements of the conversation related to informed consent and explanation of the process should also be documented to help other healthcare providers care for the patient. Nursing staff needs to establish a more standardized process of communication with each other and with the LEP population.

## APPENDIX A- Survey Questions

**LIMITED ENGLISH PROFICIENCY (LEP) PATIENTS SURVEY**

**1.** How often do you encounter a language barrier with a patient?

- ☐ 1-2 times per week or more often
- ☐ 1-2 times per month
- ☐ 1-2 times per year or Never

**2.** Do you attempt to talk to patients in English to assess level of proficiency?

A. Yes B. No C. I don't have time

**3.** Have you used the language line over the phone- (CYRACOM Language solution)?

A. Yes B. No

**4.** Have you used family members or friends of patient (at their request) to assist in translation?

A. Yes B. No

**5.** Are you aware of any other technology to assist in translation? (If yes, please write name)

A. Yes B. No

_____

**6.** Do you encounter problems with phone translation? (If yes, write what kind of problems)

A. Yes B. No

_____

**7.** Do you encounter name discrepancies with the patient's name?

A. Yes B. No C. Not very often

**8.** Have you printed informed consent documents in another language?

A. Yes B. No

**9.** Have you read any policy regarding communication with LEP patients?

A. Yes B. No

**10.** Would you prefer video assisted translation technology to voice only translations?

A. Yes B. No C. It makes no difference

**11.** Do you use the internet to translate words to assist in translation?

A. Yes B. No

**12.** Where do you document the need of a translator for a pre-op patient?

_____

**13.** Do you print pre-op instructions in another language?

A. Yes B. No

**14.** Comments or suggestions: _____

## APPENDIX B- Consent Form

**The use of communication technology to decrease the impact of language barrier among Nurses interviewing limited English proficiency patients (LEP) in the pre-admission clinic**

Dear Participant (RN/LPN):

You are being asked to participate in a research study in which we will ask questions about the care of a Limited English proficiency (LEP) patient in the pre-admission clinic. People invited to participate in this study must be an RN or an LPN interviewing patients prior to surgery.

If you decide to take part in this research study, you will complete a short questionnaire. There is no further procedure required. I will analyze the results of this study.

There are no physical risks associated with this study. Every effort will be made to keep your information confidential. Please note that you will likely receive no direct benefit from taking part in this research study. You will not be paid for taking part of this study. You will not be identified by name in this study or in any publication of the research results. Please visit the IRB website at http://www.uthsc.edu/research/compliance/irb/ if you have any questions about your rights as a participant in this study or your rights as a research subject.

Your participation in this research is voluntary. You have read or have had read to you a description of the research study as outlined above. The investigator has explained the study to you and has answered all your questions. You knowingly and freely choose to participate in the study.

IRB # 18-05812-XM Approval Date 02-26-2018

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